

**Remarks**

Reconsideration of this application is respectfully requested.

In the Final Action dated May 3, 2006, claims 9 – 19 were rejected under 35 U.S.C. § 103(a) in view of Welch et al., U.S. Patent Publication No. 2004-0065645 (“Welch”).

Applicant has amended claim 15 to claim a step already present in claim 9; namely, “when processing is idle.” No new issue of patentability is raised, and new matter is added.

Independent claim 9 is directed towards , *inter alia* , “A method for providing a continuously variable clean dry air (CDA) flow in a semiconductor processor for substrate processing comprising. . . maintaining a predefined temperature inside a dome of the semiconductor processor during the time that the processor is processing substrates and when substrate processing is idle.” Independent claim 15 is directed towards semiconductor processing including, *inter alia*, “continuously varying a clean dry air (CDA) flow responsive to temperatures changes in the domed process chamber, such that a dome temperature is stabilized in accordance with a preset temperature during a semiconductor manufacturing process and when processing is idle.” Contrary to the Examiner’s assertions, Welch does not disclose or suggest maintaining a predefined temperature, or temperature stabilization according to a preset temperature, during idling, a feature of claims 9 and 15, respectfully; nor, would it have motivated one of ordinary skill in the art of semiconductor processing at the time Applicant's invention was made to modify the teachings of Welch to achieve such a method.

Welch, at most, describes a method for increasing the efficiency of, and reducing the time required to stabilize or control the temperature of the dome of a chamber once RF energy has been applied, i.e., at the initiation of and during the substrate processing. Nowhere within the four corners of the Welch reference is there any disclosure, explicit or implicit, of a mechanism or method for stabilizing or maintaining a predefined temperature inside the dome of a semiconductor processor once the process is idle, as is claimed by Applicant.

In order to establish a prima facie case of obviousness, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings, and the prior art reference (or references when combined) must teach or suggest all of the claim limitations. MPEP § 2142. The Examiner has not satisfied these requirements, and therefore has failed to establish a prima facie case of obviousness.

The Action alleges on page 2, with respect to Welch “The disclosure that the temperature control can function independent of reaction implies that the reactor can be idled (paragraph 0098).” This statement in the Action is taken out of its context in the disclosure of paragraph 0098 in Welch. Paragraph 0098 in Welch comes under the heading “4. Circulating Fan” and states in full:

Independent control over the speed of the fan allows it to be synchronized with operation of the external heat sources such as heat lamps or resistive heaters, thereby reducing forced convective cooling during external heating. This maximizes power efficiency and heating and cooling response. Exercise of independent control over fan speed allows the circulating air flow to be

synchronized with a dome temperature controller. This allows the fan to function independently or in conjunction with the lamps or resistive heaters to achieve temporal control over the dome temperature.

The operation of the fan is merely independent of the lamps or heaters. Nowhere in this paragraph is there even a vague reference of a temperature control functioning independent of reaction, as the Action alleges. Further, and more importantly, this paragraph in no way discloses or suggests either, 1) maintaining a predefined temperature when the process is idle, as is claimed by Applicant in claim 9, or 2) stabilizing dome temperature in accordance with a preset temperature when the processing is idle, as is claimed by Applicant in claim 15. Paragraph 0098 is merely indicating that the fan can operate either in conjunction with, or independent of, the heating elements, in order to “maximize power efficiency and heating and cooling response.”

The Action misinterprets Welch, with respect to paragraph 0098 because this paragraph taken in conjunction with its preceding and successive paragraphs demonstrates that Welch teaches a method for rapid, temperature adjustment over time by employing the use of a high speed fan during periods when RF energy is applied to the chamber dome (i.e., when plasma is being generated); which is the very antithesis of process idling as claimed by Applicant. Significantly, at paragraph 0087, Welch states “[A]nother feature . . . is provision of a fan to create high velocity airflow . . . to carry away heat transferred to the dome from plasma excited by inductive RF current of the dome coils and the RF water [sic] bias voltage.” (emphasis added). Additionally, the entirety of paragraphs 0099 through 0102, as well as Figures 6 and 7, teach the improved rate ( $\Delta T$ / time), using Welch’s invention, with which temperature stabilization can be achieved, under conditions where energy is being applied to the dome either

through the top coils, side coils and/or the wafer bias. Welch fails to disclose or suggest maintaining or stabilizing the temperature of a dome according to a predefined or preset temperature under conditions when his processing is idle, (specifically, Welch's process is idle when no RF energy is being applied). For the Action to state that the independent control of the fan in Welch is equivalent to Applicant's claims of maintaining or stabilizing temperature in a dome during process idling is erroneous. Moreover, Welch teaches a method of rapid stabilization of temperature in the dome after RF energy has been applied which is completely distinct and separate from the methods claimed by Applicant.

Thus, the Action has not shown that Welch discloses or suggests all of the claim limitations found in Applicant's independent claims 9 and 15, and as such, the Examiner has not established a *prima facie* case of obviousness required by MPEP § 2142.

Claims 10 – 14 and 16 – 19 are dependent upon independent claims 9 and 15 respectively, and thus should be allowable at least through dependency.

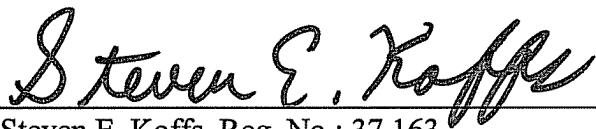
In view of the foregoing amendments and remarks, Applicant submits that this application is in condition for allowance. Early notification to that effect is respectfully requested.

Appl. No.: 10/825,871  
Amdt. dated 6/30/2006  
Response after Final Office Action of May 3, 2006

The Assistant Commissioner for Patents is hereby authorized to charge any additional fees or credit any excess payment that may be associated with this communication to deposit account **04-1679**.

Respectfully submitted,

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